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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/827,457	MAEKAWA ET AL.	
	Examiner	Art Unit	
	MARIANNE L. PADGETT	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,16,17 and 23-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,16,17 and 23-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The **amendment filed 3/19/2009** is **objected** to under **35 U.S.C. 132(a)** because it introduces **New Matter** into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention.

The added material, which is not supported by the original disclosure, is as follows: in the paragraph bridging pages 19-20 "using nozzle units 15 having plural plasma irradiating spots" on the substrate 10 having conducted film 11 deposited thereon before deposition of masking pattern 14, is not supported by the original specification (pages 19-20), or the sequence of figure 8, e.g. Fig.8(A) + Fig.8(B) + Fig.8(C) that these pages are describing & particularly the amended paragraph is describing. There is no suggestion in the original specification nor in the figure that the nozzle units used in Fig. 8(C) for etching the conductive film to form the wiring not covered by the mask pattern 14, may be used before the etching for plasma pretreatment to do in entirely different operation to improve a contact property, hence this amendment to the specification for which no support was cited nor explanation provided for this change in scope, is considered to introduce **New Matter** into the specification. Furthermore, applicants have also changed "plural... ports" to "plural... spots", which is entirely different meaning, and not consistent with the figures, which do clearly show plural ports in nozzle units being employed, but only as directed to unitary locations, which might in each figure be called a single spot, hence this amendment of plural spots for both nozzle units 15 & drop discharge means 13, are inconsistent with the illustrations of figure 8, and are not seem to have any basis in the disclosure's example being amended, thus also appear to introduce **New Matter** into the specification.

As the examiner noted in the objection of section 3 of the action mailed 12/19/2009, to which applicants assert they are responding (page 10 of the 3/19/09 response on the first page of the remarks), the objected to paragraph that applicants have amended, is directed to figure 8(B) & only shows the step illustrated therein being directed to a drop discharge patterned deposition, with no suggestion of any plasma application step, there is certainly no suggestion in this figure or the original specification of

employing the plasma etching nozzle before masked deposition for something other than etching, then using the same unit of nozzles immediately thereafter for a different process!

Applicant is required to cancel the new matter in the reply to this Office Action.

2. **Claims 1, 3-4, 6, 16-17 & 23-29** are rejected under 35 U.S.C. **112, second** paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While applicants made amendments in independent claims 23 & 26 stated to be for the purpose of improving clarity as previously rejected, however the changes made appear to do nothing to address the issues, mainly paraphrasing to recreate the same ambiguity. Also while independent claim 2 has been amended to clarify the antecedent basis & to describe the consecutive formation of two parts of a single overall pattern, the problem has not been addressed for all the independent claims, i.e. independent claim 1, so the issues remain with respect to independent claims 1, plus 23 & 26. In the last action it was previously set forth that "In **all the independent claims**, it is ambiguous whether the process is intended to be directed to two sequences of layer deposition, such as may be superimposed on top of each other (e.g. figure 8 & 10(A) sequences, described on pages 19-22), or if the repeated sequence of steps represents processing of a next portion of an overall pattern, which sequentially repeats the same set of steps as the integrated first & second nozzle system is moved to each new portion of the surface, in order to complete the overall pattern over all portions of the surface" ((emphasis added) so considering pending claim numbers, the discussion applied to all independent claims, such that 16, 16-17 was clearly a dictation error (the dictation program Dragon unfortunately sometimes backtracks and deletes hyphens)). Note that the latter is a mechanistic description of the progress of the coating procedure across the surface, which is consistent with the claims' reference to "a surface" & "the surface", as well as application of only one drop to form each pattern, but the former is consistent with the examples illustrated in figures 8 & 10(A), especially when considering a more complex independent claims 23 &

26, which would appear to provide support for the procedure of using a resist mask in order to etch & perfect the conductive deposit for use as wiring, as it is impossible for a single drop of [electrically] conductive material to be considered "wiring" as required by these claims, since there must be enough of a pattern to connect things, in order for it to be called wiring! However figure 10 & discussion thereof, does not appear to repeat the masking procedure, although it creates more wiring so it is unclear which of these options would be considered properly & completely supported by applicants' original specification, especially lacking any description & discussion of support cited by applicants.

Note that with respect to claims 23 & 26, the 3/19/2009 amendment adding "a part of" before both "the first wiring" & "the second wiring" does not clarify the relationship between the first & second wiring patterns with respect to each other, i.e. are both first & second wiring patterns & parts thereof just aspects of one overall pattern being formed at one level on the substrate, or are they intended to be separate wiring patterns such as are formed on two levels to form multilevel interconnect patterns, or what? As presently written, the process as claimed continues to read on either option.

It is noted, in **claims 23 & 26**, the issue with respect to conductivity has been clarified by the 3/19/2009 amendment.

The amendments to the independent **claims 1, 23 & 26**, specifically the "wherein..." limitations added to the end of each claim, have created new clarity problems. With respect **claim 1**, the addition of "wherein a groove is formed in the first selected portion by irradiating the first selected portion with plasma" does not state **when** this irradiation of plasma that creates the groove is formed, since "plasma" is introduced as a new term having no antecedents to the limitation of "irradiating the first selected portion..." in lines 6-7, such that it is unclear the initially introduced irradiating step for the first section is forming group or if this is a totally separate plasma irradiating step, with no relationship between the two plasmas. It is noted that while in both claim 1, lines 6 & 14, "plasma" was introduced without an article,

in each instance that plasma was described as "from the first nozzle", thus providing context in combination with the temporal limitations of the claim.

With respect to **claims 23 & 26**, the addition of "wherein quantity of **plasma gas to be irradiated** is varied between a vicinity of a region at which the part of the first wiring is formed and **the other region**" (emphasis added), create several clarity issues. *First*, the phrasing "plasma gas to be irradiated" is literally directed to treatment of the gas which is used to form the plasma, not irradiating with gas which has already been formed into plasma, which is what the examiner had understood is supposed to be coming out of the first nozzle, but the contradictory nature of this amended phrasing makes it unclear what exactly is being performed, especially since again there is no clear antecedents between "plasma gas" & "gas of a plasma" in either previous use (claim 23, lines 5 & 16; or claim 26, lines 5 & 18). *Second*, "the other region" lacks any antecedent basis, as no such terminology was previously employed in the preceding claim limitations. *Third*, analogous to the problem is set forth in claim 1, it is uncertain in claims 23 & 26 whether the "plasma gas" is intended to be that which is output by the first nozzle with respect to formation of the first groove in the first selected portion, or if these are intended to be two entirely separate plasmas, thus creating additional ambiguity in the claimed language.

The examiner notes that on page 14 of the 3/19/though not response support was cited for the amendments to the claims 23 & 26 as being present on page 22, lines 21-25, which recite "In the etching, plasma fluoride gas is irradiated from nozzle units 31. Also in this case, the quantity of the reactive gas to be sprayed is very day between the vicinity of the wiring forming region and the other region. As a large quantity of the reactive gas is discharged into the region where the non-single crystal silicon film is exposed, the etching is balanced and consumption of reactive gas can be saved", so appears to have partially lifted terminology from the specification without regard to claimed language, but also dropping context that is present in the specification (e.g. relationship to nozzles, etc.), thus creating possible

meanings outside the scope of the very specific context of disclosure as used in the specification (although meaning of "the other region" is not even particularly clear in the specification).

Claims 1, 3-4, 6, 16-17 & 23-30 are rejected under 35 U.S.C. **112, first** paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

For reasons as discussed above, due to the ambiguous phrasing with respect to the first & second patternings, the wirings etc., it is uncertain exactly what is supported & what is the support for these claims as amended, thus it appears that either option might introduce some **New Matter** into the claims, however it also appears that this issue might be corrected by clarification of phrasing **in combination with clear citations of clear unambiguous support from the specification**.

3. The following is a quotation of **35 U.S.C. 103(a)** which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The **nonstatutory double patenting rejection** is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1-6, 16-17 & 29-30** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Kiguchi et al.** (582), as applied to claims 1, 3-4, 6 & 29 above, and further in view of **Di Dio** (2004/0152329 A1), optionally considering **Lewis et al.** (5,272,979).

Applicants have in the 3/19/2009 amendment added the requirement to independent claim 1 of plasma irradiation of the first selected portion forming a groove, where that plasma irradiation may or may not be the only plasma irradiation performed on the first select portion & it may or may not be before application of the first pattern of applying a liquid composition drop, however concepts inclusive of groove formation via plasma were already discussed with respect claim 2, of which claim 1 is now covers, but in a broader & ambiguous manner.

To reiterate, **Kiguchi et al.** (582) teach at various treatment systems employed with inkjet drop delivery to substrates (useful nozzle system described) of coating materials, inclusive of essentially any fluid of sufficiently low viscosity, exemplified by compositions containing electric conductive metal & solvent, metal salts, organic pigments in resins & Al_2O_3 or silica. While the substrates on which the processes may be performed are not particularly limited, specific mention is made of substrates used in

semiconductor processes, such as silicon substrates, or substrates on which plasma treatment has been performed resulting in crosslinking of macromolecules of the substrate, i.e. essentially disclosing polymeric substrates that are inclusive of insulating materials. Kiguchi et al. described employing a drive mechanism 4 to move the inkjet head & treatment apparatus in tandem in either X- or Y-directions, as illustrated in figures 1-6, esp. 1-3, which reads on claimed horizontal movement, as well as being consistent with patterning on first selected portion & second selected portion, consecutively. Kiguchi et al. have disclosures relating to treatments performed before during and after droplet delivery, where the treatments delivered before are of particular interest with respect applicants' claims, where the treatment techniques are inclusive of reverse sputtering of in Ar (i.e. generally a plasma etching effect), corona ejection treatments & gas plasma treatments, with description of performing a plasma treatment discussing the treatment apparatus being configured such that is possible to eject a plasma generated by a gas discharge, which ejection teachings are considered to read on work the equivalent to a nozzle configuration. Alternatively, it would've been obvious to one of ordinary skill in the art that in order to effect ejection of plasma or corona discharge, it would've been necessary to have a chamber or generation zone with an exit to eject them from, thus to employ such a structure in order to perform the teachings of Kiguchi et al. The reference specifically teaches use of plasma type processes (sputtering, corona or plasma treatment) for use in pretreatment of surfaces before application of ejected droplets, and particularly mentions that surface modifications employed may be used to create affinity for the liquid being applied in the desired path, remove affinity for the liquid to be applied on banks adjacent to the desired deposition path **&/or** to actually form banks around the pattern forming region in order to prevent fluid from flowing out of it (e.g. col. 3, lines 22-53, esp. 40-44, etc.). Kiguchi et al. further disclose that their disclosed treatment options may be used individually or a plurality of them may be used at the same time when pattern formation is completed as a result of the plurality of steps. Particularly see the abstract; figures; col. 1, lines 8-16 & 48-65; col. 2, lines 8-13; col. 3, lines 23 (esp. 40-45 for bank

formation)-col. 4, line 14 & 40-42 & 57-64; col. 6, lines 15-45+; col. 7, lines 11-45; col. 8, lines 1-12; col. 9, lines 52-55; col. 10, lines 1-4; embodiment 3, esp. col. 10, lines 28-44 & 51-col. 11, lines 7, 33-41 & 53-59; plus further relevant disclosure on col. 12, lines 10-25; col. 13, lines 1-10 suggesting various polymers or resins as bank material; & col. 18, lines 17-52; plus claims.

It was further noted that while Kiguchi et al. discuss pattern formation, illustrating in figure 1, a pattern path moved in several different horizontal directions, they *do not explicitly* discuss deposition of multiple pattern portions when employing pretreatment using some form of plasma, however given the teachings of arbitrary patterning (Field of the Invention), of employing various taught options together (col. 18), and of teachings concerning in drive mechanism and movement (figure 1 & col. 7), these teachings may be considered to encompass applicants' claim of a pattern of on a first portion made by the horizontal movement, then sequential plasma & drop deposition treatments, plus a pattern on the second portion made by the horizontal movement then sequential plasma & drop deposition treatments, as each change in direction may be considered a horizontal movement onto another portion to form another pattern, or even each incremental plasma treatment followed by drop deposition may be considered a different portion & different pattern, as would be consistent with the "a drop..." nomenclature in the present claims. Alternatively, it would've been obvious to employ such patterning designs with particular taught plasma, corona or sputtering pretreatments before inkjet droplet application, or to employ the process for multiple successive pattern depositions on the substrate as a whole, due to the overall teachings in the patent, which would suggest patterning employing multiple directions, or as application of multiple coatings by the liked techniques, especially in the suggested uses for semiconductor industry, are typical & conventional practices, dependent on the specific product intended to be produced, such as multilayers for wiring configurations that are old and well-known as typical in the integrated circuit & semiconductor industry.

Also note that while the teaching that the various options may be used in combination can be considered to include the teachings of forming on the surface insulating film, i.e. banks for containing the pattern depositions, as well as one of the various plasma pretreatments for the deposit, before the ink drop deposition occurs, Kiguchi et al. does not explicitly set forth this combination of steps, however given the overall teachings & the teachings that combination of pretreatment steps can be employed, it would have alternately have been obvious to one of ordinary skill in the art to combine such teachings due to the suggestion of use of multiple options taught therein, as well as the reasonable expectation that improving the affinity due to plasma treatment, plus as well as an initial deposition of insulating bank material to hold the flow of droplet material (possibly retreated to eliminate affinity or otherwise treated to insure its effectiveness) would have been expected to work in combination together provide a greater overall improvement together in resolution of the deposit due to the different means each technique employs to improve the resolution , which would have reasonably been expected to provide cumulative desirable effects.

Kiguchi et al. does not discuss pressures employed in any of their processing techniques, however they also do not disclose the necessity or even mention the use of a chamber in which the overall process is performed, let alone one that requires a vacuum to be created, hence it would've been reasonable for one of ordinary skill in the art to assume that in general the processes as taught may be performed at atmospheric pressure, thus the tandem surface (plasma or corona) treatment, then ink drop deposition , which has taught would have to be performed at the same pressure would reasonably have been performed at atmospheric pressure, especially considering that unless stated otherwise, corona discharge is usually performed at atmospheric pressure, or unless some particular characteristic of a particular treatment/deposition sequence required more stringent considerations (e.g. for contamination control &/or control of a particular technique, etc.). Also note that applicants' claimed range of 13 Pa-1.31 x 10^5 Pa ≈1-980 Torr is inclusive of atmospheric pressure.

While **Kiguchi et al.** teach use of plasma for surface modification in general, or for increasing or decreasing droplet affinity, & generic means of changing the surface affinity, with mentioned that pre-treatment processes before inkjet deposition may be employed to form banks to hold following ink jet deposition, they do not specifically suggesting that a means of employ about the the plasma to increase the affinity are plasma treating when forming banks, includes etching deposited bank material in order to form a groove to thus create the banks, however **Di Dio** (abstract; [0045-55], esp. [0053]; claims, esp. 1, 6, 10 & 16) teach a process of depositing hydrophobic material, then depositing a "deep UV" photoresist material thereon, patterning the photoresist material to expose the hydrophobic layer in the pattern, followed by etching of the exposed hydrophobic material, where that **etching may include plasma etching** (described as a traditional technique) to selectively remove hydrophobic material & expose underlying material. It would've been obvious to one of ordinary skill in the art to employ the patterning technique of Di Dio in forming the banks Kiguchi et al., as it provides an alternate bank formation techniques consistent with the processing techniques as disclosed in the primary reference, as well as showing the expected effectiveness of employing plasma for etching bank materials, as well as specifically noting that such etching procedures are traditional means of effecting such analogous patterning, which in combination with Kiguchi et al.'s teachings which employ plasma for treatment of the material of the banks, with suggested language relating to bank formation in connection with pretreatments, would clearly suggest one of ordinary skill in the art that formation of the banks, i.e. patterning of the initially deposited material in order to form the banks, would reasonably have been expected to beat effectively performed by using pretreatment plasmas as suggested in Kiguchi et al. in the actual bank formation as taught by Di Dio.

While this combination does not teach the plasma for the etching comes from a nozzle, as discussed above the teachings of Kiguchi et al. are considered inclusive of application of the taught plasma or corona techniques via a nozzle, but optionally, **Lewis et al.** (979) may be further considered, as

they clearly teach ablation from a plasma, where patterning is inclusive of their technique, hence the suggested plasma etching of the combination would have been expected to be effective when using a nozzle & would have been further obvious to accomplish with a plasma from a nozzle, for reasons as discussed above & as it has been demonstrated to provide patterning as desired by the combination.

As discussed in previous actions, **Lewis et al.** (979) employ plasma jet discharges in order to **ablate or otherwise transformed surface layers to change the affinity to subsequently applied coating**, such as printing ink or aqueous solutions, where such plasma techniques discussed in Lewis et al., include the use of working gases such as N, Ar or another inert gas or oxidizing gases, such as oxygen; can be employed for effecting positive or negative affinity of substrates, including for wet coating techniques. In Lewis et al. (979 see the abstract; figures 3 & 4; col. 3, lines 46-55; col. 4, especially lines 1-12, & 40-61; col. 5, lines 25-41; col. 6, lines 55-col. 7, line 29; col. 9, lines 51-61; col. 10, lines 25-39; col. 14, lines 43- 54+; and col. 15, lines 33-68+). Therefore, it would have been reasonable to one of ordinary skill in the art that as Kiguchi et al. is providing teachings concerning plasmas that selectively affect the surface affinity to subsequent coating using plasmas suggesting output from nozzles, as well as bank formation, & Di Dio provide teachings and motivation to form analogous banks via plasma etching procedures applied to insulative films to remove material & thus formed the equivalent of banks in the form of grooves, but do not discuss particular plasma details to achieve the etching, that the process of Lewis et al. provide plasma techniques which would have been expected to be equivalently effective in the process of Kiguchi et al., as Lewis et al. demonstrates their techniques effectiveness for multiple different coatings inclusive of polymeric materials, metal materials, silicones, inks, etc., thus **showing** the expected general **effectiveness of such affinity & etching treatments via plasma from a nozzle**.

5. **Seki et al.** (EP 0989778 A1), as discussed in previous actions (section 5-6 of the action mailed 1/25/2008 & section 6 of the action mailed 11/7/2006) remains cumulative to the above rejections,

as presenting specific plasma pre-treatments effective on specific materials before liquid applications that are relevant to the more general teachings of Kiguchi et al. (582).

6. **Claims 23-28** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Kiguchi et al.** (582 and in view of **Di Dio** (2004/0152329 A1), optionally considering **Lewis et al.** (5,272,979)), as applied to claims 1-6, 16-17 & 29-30 above, further in view of **Yamazaki et al.** (7,189,654 B2).

While the additions to independent claims 23 & 26 cannot be discussed with any real clarity, due to their uncertain meaning, the examiner notes that any localized pattern application via a nozzle will inherently provide a variation in plasma gas supplied in the plasma between the area(s) of localized application, and those areas surrounding it which are not being treated at that instant, thus possible intended meanings of the new claim language would already have been covered by the preceding rejection.

Independent claims 23 & 26 require additional limitations in a more detailed process, which includes or encompasses the more general processes of independent claims 1 & 2, except not necessitating the initial film deposition of insulating surface (which lacking any specific materials for succeeding steps has very little meaning). Specifically, these claims require that the patterns formed the conduct of patterns, however this is consistent with Kiguchi et al.'s teaching of employing metal salts or electric conductive materials in solution, however Kiguchi et al. does not specifically discuss that these materials that will create electrically conductive deposits are employed for forming wiring patterns via subsequent forming thereover of a resist that is a mask pattern, nor (if the claims aren't actually directed to the same sort of incremental processing as discussed by Kiguchi et al.) that the sequence of steps is done twice. It is further noted that claim 26 is analogous to claim 2 (& to a lesser extent now claim 1) in that it requires the plasma treatments to produce grooves.

However, **Yamazaki et al.** (abstract; figures 3 & 4; claims, esp. 1-2, 5, 7, 10, 12, 15, 17, 19, 21 & 23) teaches process of further treating a deposited metal layer on a dielectric surface by selectively

depositing in masking material thereon & plasma etching via a plasma device employing a nozzle in order to selectively etch the periphery of the conductive layer in order to form or prefect a wiring pattern. Therefore, it would've been obvious to one of ordinary skill in the art that given Kiguchi et al., or Kiguchi et al., in view of Di Dio et al. & optionally Lewis et al., as discussed above, which provides options of depositing conductive layers as claimed to further treat such layers as taught by Yamazaki et al., in order to perfect the conductive pattern layer for use as a wiring layer, as electrically conductive metal patterns are conventionally used as wiring layers, plus as the deposition & plasma treatments taught by Yamazaki are consistent with further treatment & deposition options as discussed by the above combination, especially considering the teachings therein that one may combine multiple options in order to produce the overall process.

7. **Claims 23-28** are rejected on the ground of nonstatutory **obviousness-type double patenting** as being unpatentable over claims 1-24 of U.S. Patent No. **7,189,654 B2** (Yamazaki et al.), in view of **Kiguchi et al.** (582), further in view of **Di Dio** (2004/0152329 A1), optionally considering **Lewis et al**. (5,272,979)), as discussed above.

The claims of copending case by overlapping inventors differ by depositing the initial conductive layer via a different techniques, i.e. CVD, evaporation or sputtering, however employ essentially the same techniques for perfecting the conductive deposition for use as a wiring configuration via use of a selectively deposited resist layer & etching, therefore for reasons as discussed above it would've been obvious to one of ordinary skill in the art to use alternative techniques for depositing an electrically conductive pattern, as the technique of the initial deposition of the conductive pattern does not appear to be critical given the ability to depositing via multiple different techniques.

8. Applicant's arguments filed 3/19/2009 & discussed above have been fully considered but they are not persuasive.

Applicant's arguments with respect to the 102 over Kiguchi et al., while moot in view of the new rejection made in response to applicant's amendments, are clearly inaccurate, since the requirement of "a groove" in independent claim 1 was only made into 3/19/2009 amendment & the claims in which grooves were previously required, were not rejected over Kiguchi et al. as a stand-alone reference, thus saying that the quote examiner appears to contend that the banks in Kiguchi correspond to a groove for a hole" in the previous rejection of claim 1 has no basis in fact, however well mainly directed to treatment of banks, e.g. via plasma or the like), Kiguchi et al. also suggest formation of the banks, in such a way that does not exclude the use of etching to do so, as was discussed above.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. **Any inquiry** concerning this communication or earlier communications from the examiner should be directed to **Marianne L. Padgett** whose telephone number is **(571) 272-1425**. The examiner can normally be reached on M-F from about 9:00 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Marianne L. Padgett/
Primary Examiner, Art Unit 1792

MLP/dictation software

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